

Scaling innovative, low-impact tourism practices in African mixed world heritage sites post-COVID: perspectives from Maloti-Drakensberg Park and Ngorongoro Conservation Area

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Abstract

Purpose – This study aimed at analyzing the post-COVID-19 resilience and recovery trajectories of two African mixed World Heritage Sites (WHS), the Maloti-Drakensberg Park and the Ngorongoro Conservation Area. The study explored how these sites' dual natural and cultural management, stakeholder dynamics and governance structures influenced the scaling of innovative, low-impact tourism practices in response to the pandemic.

Design/methodology/approach – Drawing on qualitative interviews with [$n = 12$] key informants in site management and planning roles, the research investigates how these sites navigated the pandemic, what strategies were employed to support recovery and what challenges persist.

Findings – Findings reveal that while both sites demonstrated operational resilience through health protocols, digital engagement and domestic tourism pivots, they continue to face systemic barriers such as governance fragmentation, limited innovation capacity and cultural resistance to scientific adaptation. Importantly, the study shows that mixed WHS require tailored recovery frameworks that reflect their complex mandates.

Originality/value – It contributes to the growing body of literature on heritage resilience by offering rare empirical insights from under-represented African contexts. The paper concludes with recommendations for integrated governance, diversified funding and inclusive policy reform to strengthen the long-term sustainability of mixed WHS in an increasingly uncertain global landscape.

Keywords Mixed world heritage sites, Post-pandemic recovery, Governance challenges, Resilience strategies, African heritage conservation

Paper type Research article

1. Introduction

The COVID-19 pandemic severely disrupted the global tourism industry, exposing structural vulnerabilities and highlighting the urgent need for adaptive and sustainable recovery strategies (Huynh *et al.*, 2022). According to the World Tourism Organization (UNWTO, 2021), international tourist arrivals in Africa declined by over 74% in 2020 alone, significantly affecting protected areas and heritage sites that rely on tourism revenues for conservation and



community development. As research has begun to document the effects of the pandemic on cultural and natural heritage tourism, a critical gap remains in understanding how mixed World Heritage Sites (WHS), sites inscribed for both their natural and cultural value, have fared during and after the crisis (Pennington-Gray and Basurto, 2023). According to Dey and Pasupuleti (2025), mixed WHS represent some of the most complex protected areas in the world, governed by overlapping mandates, often involving competing interests between conservation and cultural preservation. These dual-designated sites demand an integrated management approach that balances ecological integrity with cultural continuity, often in challenging socio-political and economic contexts (Abouei and Tavasoli, 2024). In Africa, where only six mixed WHS exist, these challenges are further magnified by limited resources, developmental pressures and community dependency on volatile tourism revenues (Gorenflo and Romaine, 2021).

The pandemic came in with new layers of complexity to the management of these already sensitive sites (Spennemann, 2021). Managers at heritage sites were faced with the dual task of maintaining heritage integrity while responding to sudden declines in visitation, disrupted revenue flows and rapidly shifting policy environments (Pennington-Gray and Basurto, 2023). For this study, resilience is the capacity of heritage systems and institutions to absorb shocks, adapt to crises and transform practices for long-term sustainability, it has become a central lens through which to assess post-COVID recovery and management effectiveness. Hosseini *et al.* (2021) have noted that empirical research on resilience in mixed WHS is limited, especially in the Global South context. This study examines the post-COVID resilience and recovery trajectories of two African mixed WHS, the Maloti-Drakensberg Park with its location straddling the border of South Africa and Lesotho and the Ngorongoro Conservation Area (NCA) in Tanzania. The study draws on in-depth interviews with key stakeholders in managerial and operational roles, exploring three interrelated questions: (1) How resilient are these sites in the face of pandemic-induced disruption? (2) What low-impact tourism strategies have been implemented to support recovery? (3) What challenges continue to constrain their sustainable management?

Lately, heritage resilience has received growing scholarly attention, but only a few studies have engaged with the specificities of mixed WHS governance and the multi-scalar dynamics that shape their post-crisis trajectories (Kuliš, 2024). Majority of the studies focus on either natural or cultural WHS, rarely addressing the management realities of sites that embody both. This study offers empirical insights from the mentioned two iconic African heritage sites, grounded in the lived experiences of site managers navigating complexity, uncertainty and change. It contributes to the growing literature on post-crisis heritage governance, low-impact tourism and protected area resilience while raising a critical policy question on whether mixed WHS are trailing behind other WHS types in post-COVID recovery.

2. Literature review

Mixed WHS are those WHS that are inscribed for both their cultural and natural value, and they are among the most complex to manage within UNESCO's global framework (Valagussa *et al.*, 2020). According to Liu *et al.* (2022), the dual designation of mixed WHS often result in competing priorities, mandates and stakeholder interests, ranging from conservation science and Indigenous knowledge to tourism development and community livelihoods. Other studies have noted the institutional and operational tensions in such contexts, observing that mixed WHS frequently straddle conservation authorities, cultural heritage departments, and local governance bodies, each with divergent resource capacities and political agendas (Newisar, 2023; Morrison *et al.*, 2020). In addition, institutional documentation provided by the United Nations Educational, Scientific and Cultural Organization (UNESCO) offers crucial system-level perspective on both the governance and vulnerability of mixed WHS. During the COVID-19 pandemic, UNESCO produced several global reports on how WHS, especially those in Africa, experienced disproportionate shocks because of prolonged site closures,

reduced tourism and tourism income and limited monitoring capacity (UNESCO, 2021a). According to the World Heritage in the face of COVID-19, the pandemic exacerbated the pre-existing structural challenges faced in mixed WHS in Africa, such as the high reliance on tourism earnings, limited financial resilience and fragmented governance (UNESCO, 2021a). There are only six these mixed WHS in Africa, shown in Table 1.

These sites (presented in Table 1) are characterised by ecologically rich landscapes intertwined with indigenous heritage and local socio-economic dependencies (Said and Ichumbaki, 2023). In both cases, multi-layered governance systems complicate efforts to implement integrated management approaches (Zhang *et al.*, 2024). For example, NCA simultaneously operates as a UNESCO WHS, a multiple land use area and a tourism engine for Tanzania, all while being home to over 90,000 Maasai pastoralists (Kivuyo, 2021). The Maloti-Drakensberg Park, spanning South Africa and Lesotho, similarly faces tensions between transboundary conservation goals and community-based development (Mengwai, 2021). The state of conversation (SoC) reporting highlight how these governance structures manifest. At the NCA, there have been growing concerns about the population growth and land use patterns, tourism development and the increasing impacts of development on both cultural and natural values (UNESCO, 2025a). There are also persistent challenges associated with transboundary coordination between South Africa and Lesotho at the Maloti-Drakensburg Park (MDP), coupled with uneven institution capacity (UNESCO, 2021b, 2023).

According to Seekamp and Jo (2020), in heritage and environmental studies, resilience refers to the capacity of systems, ecological, institutional and social, to absorb disturbance, adapt and transform while maintaining core functions. When applied to WHS, resilience involves the ability of site management systems to withstand shocks such as pandemics, economic downturns or climate events and reorganise in ways that ensure long-term sustainability (Azzaz and Elshaer, 2024). The resilience discourse is well established in ecological sciences, but its application to mixed heritage contexts is still limited (Seekamp and Jo, 2020). Falk and Hagsten (2023) argue that most WHS frameworks prioritise risk prevention rather than adaptive management. Furthermore, existing resilience models rarely account for the complex trade-offs at mixed sites, where actions to protect ecological assets may undermine cultural continuity, and vice versa (Mbuthia *et al.*, 2024). The call for a heritage-specific resilience framework that accommodates these dualities is increasingly urgent especially in the post-COVID era.

The COVID-19 pandemic catalysed a shift in global tourism, with WHS visitation declining with over 70% in Africa (UNWTO, 2021). Heritage site managers were forced to re-evaluate tourism dependency and explore alternative, low-impact recovery models. Previous research has emphasised the importance to the transition toward more sustainable forms of heritage tourism, grounded in local community empowerment, environmental stewardship and digital engagement (Borseková and Vitálišová, 2024; Nag and Mishra, 2024). In the Angkor case, Alvarez-Sousa and Paniza Prados (2020) revealed how visitor management frameworks had to incorporate public health goals alongside traditional sustainability metrics.

Table 1. List of mixed WHS in Africa

Country	Name of the mixed WHS
Algeria	Tassili n'Ajjer
Chad	Ennedi Massif: Natural and Cultural Landscape
Gabon	Ecosystem and Relict Landscape of Lopé-Okanda
Mali	Cliffs of Bandiagara (Land of the Dogons)
Lesotho and South Africa	Maloti-Drakensberg Park
Tanzania	Ngorongoro Conservation Area

Source(s): UNESCO (2025a, b)

Similar shifts are visible across African WHS, where new actors from health ministries to digital innovators have entered the management ecosystem although these shifts are often uneven. Mensah (2023) argues that while community-inclusive planning is increasingly promoted, actual participation in post-crisis planning remains limited, especially in contexts marked by socio-political marginalisation. The UNESCO's COVID-era analyses highlight that the pandemic exposed the vulnerability of heritage governance systems largely dependent of tourism, calling for an enhanced community engagement initiative, diversification of funds and promoting more coordinated and integrated approaches across various stakeholder levels (UNESCO, 2025b).

Post the COVID-19 pandemic WHS have faced unique challenges that go beyond tourism recovery (Alvarez-Sousa and Paniza Prados, 2020). In the Drakensberg region, invasive species and land-use change pose increasing threats to biodiversity and water security (Muresherwa *et al.*, 2024). Meanwhile, climate change accelerates risks like flooding and erosion, particularly in ecologically sensitive or low-lying WHS (Vousdoukas *et al.*, 2022). At Ngorongoro, land-cover transformation driven by agricultural expansion, infrastructure development and demographic pressure continues to reduce ecological resilience and exacerbate conservation–livelihood tensions (Mengwai, 2021). Moreover, the fragmentation of management responsibilities between conservation and cultural authorities leads to policy incoherence (Liburd and Becken, 2020). Botha *et al.* (2021) highlight how lack of synergy in the Maloti-Drakensberg Park delays adaptive response, this governance gap is further worsened by limited funding, low institutional capacity and inadequate data sharing mechanisms, factors that are commonly cited across African heritage sites.

3. Methodology

This study adopted a qualitative research design to explore the post-COVID resilience and management challenges of mixed WHS in Africa. The research focused on two case study sites which are the Maloti-Drakensberg Park and NCA. MDP is a transboundary mixed WHS located between South Africa and Lesotho (Chatanga *et al.*, 2019) and the NCA is located in northern Tanzania (Kivuyo, 2021). Both of these heritage sites are globally recognised for their ecological significance and cultural heritage, and they face unique management challenges due to their dual designation (Daniel, 2023; Duval, 2022). The Maloti-Drakensberg Park is characterised by sensitive alpine ecosystems, endemic species and San rock art while also playing a key role in transboundary water security and rural livelihoods (Duval, 2022). On the other hand, NCA is a complex multiple-use area with a combination of wildlife conservation, archaeological significance and the residence of Indigenous Maasai communities (Kivuyo, 2021). The selection of these sites was purposive, based on their relevance to the research questions, diversity of governance structures, and representativeness of mixed WHS challenges in sub-Saharan Africa. Besides both sites considered relevant for the study, the site selection presented limitations regarding broader generalisability and institutional access was varied. Access to the stakeholders in Ngorongoro was readily facilitated through established networks. Conversely, in Maloti-Drakensberg, there were challenges posed by institutional gatekeeping, and this required an extended coordination with the park authorities. To ensure a balanced representation, the researchers managed these limitations through early engagement with stakeholders from both parks and initiated flexible scheduling.

Participants were selected using purposive sampling, targeting individuals with direct responsibility for or insight into the management of the two sites. Key informants [$n = 12$] were interviewed (6 from each site), these included park managers, senior conservation officers and cultural heritage specialists. The inclusion criteria for this study focused on professional experience, institutional role and capacity to speak to post-COVID management dynamics. The diversity of roles ensured a balanced perspective across conservation, tourism, and cultural mandates. In addition, the verdict to interview six participants at each site was guided by the principle of data saturation, which guided both the sample size and the depth of

inquiry. Accordingly, data saturation for the study was considered achieved when no new significant insights emerged during the final two interviews at each site. This implied that the data collated had sufficiently captured various significant perspectives to answer the study’s research questions.

Data were collected through semi-structured interviews between the researchers and the research participants. Questions asked were around perceptions of site resilience, implemented tourism recovery strategies, perceived challenges and the influence of the site’s mixed designation on management decision-making. All interviews were audio-recorded with participant consent and transcribed verbatim for analysis. Thematic analysis was employed to analyse the data, allowing for the identification of patterns, recurring themes, and divergences across the two case studies. An inductive coding process was first used to allow themes to emerge from the data, followed by a deductive round of coding based on the study’s guiding research questions. Codes were then clustered into broader categories, which informed the discussions and conclusions made by this research.

Thematic analysis revealed four major themes, (1) perceptions of resilience, (2) recovery and low-impact tourism strategies, (3) challenges to post-COVID governance and (4) opportunities and future directions. Findings reflect a nuanced picture of adaptive capacity, innovation and enduring vulnerabilities at these mixed WHS. [Table 2](#) provides the information of the study participants.

4. Results

4.1 Perceptions of resilience

Across both heritage sites, informants described resilience as the capacity to maintain essential conservation operations despite widespread disruption. At Ngorongoro, this included wildlife protection, disease surveillance and community outreach. At Maloti-Drakensberg, resilience was seen in the continuation of core environmental monitoring programmes, even as budgets were frozen and non-essential projects halted. One informant explained,

We prioritised our activities, stopped all development activities and remained with conservation activities only (K9).

Several informants emphasised the important role of scientific knowledge and public health in shaping resilient responses. Notably, vaccination campaigns were seen as a prerequisite for reopening and regaining visitor confidence.

Table 2. Information of the study participants

Identifier	Managerial role at the world heritage site
<i>Maloti-Drakensberg Park (South Africa–Lesotho)</i>	
K1	Conservation Manager
K2	Culture and Heritage Manager
K3	Park Ecologist
K4	Park Manager
K5	Planner
K6	Resort Tourism Manager
<i>Ngorongoro Conservation Area (Tanzania)</i>	
K7	Chief Conservator
K8	Community Development officer
K9	Cultural Heritage Department Manager
K10	Deputy Conservator
K11	Planning Department Manager
K12	Tourism Department Manager

We had to downscale everything and still maintain the heritage one but without people being vaccinated, tourists wouldn't return (K4).

At Ngorongoro, we have seen how cultural beliefs can influence public health decisions, especially when it comes to vaccination. That's why we've been strong advocates for science-based decision-making, and we've worked to launch public awareness campaigns aimed at building trust and understanding within our communities. It's a challenging path, but we believe that through education and respectful engagement, we can help shift perceptions and improve health outcomes for everyone here (K7).

Resilience also encompassed social dimensions including continued support for the surrounding communities. Informants highlighted measures such as food distribution, schooling support and livestock vaccination for neighbouring populations as part of a broader resilience strategy

This disruption helped us realise we are part of a larger social fabric. We had to think beyond the park boundary (K12).

Both heritage sites demonstrated strong operational resilience, supported by staff commitment and external aid. However, conceptions of resilience depended mostly on physical continuity rather than long-term institutional learning or reform.

4.2 Recovery and low-impact tourism strategies

When it comes to recovery, both sites implemented a range of strategies that reoriented their tourism models toward domestic markets, digital platforms and lower-impact experiences. The widespread collapse of international visitation catalysed a shift in marketing and programming, with digital storytelling and virtual tourism emerging as prominent innovations

Online access is great, but many rural communities we work with don't have stable internet (K6).

We started virtual tourism . . . streaming wildlife and sharing our sites on social media (K7).

We found that the use of digital oriented strategies was crucial in keeping our site visible to the international community (K9).

We embraced virtual outreach as well, and it ended up strengthening our connections not just globally, but locally too. By sharing our stories online, we saw a rise in community engagement and pride in our heritage, especially among younger audiences (K12).

Domestic tourism became a basis for the short-term recovery of the tourism industry, and several respondents indicated that new pricing models and targeted promotions helped attract local visitors who had previously been marginalised by internationalised heritage economies

We realised we had to make tourism products more available to local tourists, by having a different price structure (K5).

Adaptations were not only economic but operational, recovery of the tourism sector also involved adaptive management practices such as revising trail systems, introducing new outdoor activities like horse riding and mountain biking (K6).

Health and safety protocols were implemented carefully to instill confidence among visitors.

We were following health guidelines strictly, not just for show, but because it helped reassure guests (K12).

4.3 Challenges to post-COVID governance

Informants reported persistent governance and management challenges that limited their capacity to respond effectively to crisis conditions despite the adaptations. The major challenges encompassed institutional fragmentation, limited innovation ecosystems and

structural overdependence on tourism revenue. Several interviewees expressed the lack of integration between conservation and cultural agencies, both within and across national boundaries especially in Maloti-Drakensberg.

It is hard to coordinate when mandates are split. There's a lack of synergy that slows decision-making (K5).

We experienced this firsthand, navigating overlapping institutional mandates made it difficult to act quickly during crises. Even when we had clear priorities, the lack of coordination between agencies delayed our response (K8).

Land use regulations were not only difficult but also frequently conflicted with conservation goals. Without a unified governance structure, our ability to respond effectively was often hindered by bureaucratic hurdles and resource constraints (K9).

Technological limitations also emerged as a constraint, while digital platforms were praised for their potential, several respondents admitted that technical capacity, funding and training limited their effective deployment.

We should switch to digital marketing, so as to keep marketing the park and keep tourists aware and engaged about the park, for example by filming hiking areas (K3).

Another recurrent theme was the vulnerability created by cultural resistance to scientific public health measures. In both heritage sites, especially in Ngorongoro, some local communities resisted vaccination due to religious or traditional beliefs.

Religious beliefs, I think, was a problem, because people could not adapt to changes when science needed to be embraced (K10).

Another constraint that was identified in these heritage sites is innovation capacity. Private operators embraced digital platforms, and public institutions often lacked the technical skills or equipment to participate meaningfully.

We tried digital marketing, but most of the innovation came from private businesses, not the park itself (K3).

Post-COVID-19 pandemic, governance at both of these heritage sites was shaped by pre-existing system weaknesses, especially fragmented mandates, uneven innovation capacity and public health contestation, making comprehensive resilience difficult to achieve.

4.4 Opportunities and future directions

Many challenges were mentioned by the interviewees; however, they also expressed optimism about the future and proposed several avenues for building more resilient, inclusive and adaptive WHS governance models. One of the avenues was a call for stronger science-policy integration, especially in public health and conservation.

We need to trust evidence-based research, not uninformed traditions (K7).

Capacity building was repeatedly mentioned both as a means of empowering local staff and as a pathway to broader stakeholder inclusion, informants recommended inter-site training programmes, virtual knowledge-sharing platforms and international partnerships.

More conferences, more websites, more cross-site learning; we don't need to reinvent the wheel (K2).

There was also an interest in embedding heritage values into local education systems, thereby nurturing a conservation ethic from an early age.

Children should learn about WHS from primary school, so that it becomes part of their worldview (K9).

The informants also advocated for the expansion of diverse revenue streams beyond tourism. These included real estate ventures, cultural product development and ecosystem services payments, aimed at stabilising site finances and reducing external vulnerability. Informants also called for community-based inclusion mechanisms, ranging from participatory planning to youth-led conservation projects.

Resilience must involve the people who live here. Otherwise, we're just buying time (K8).

Site managers were not only reactive but reflective, using the COVID-19 crisis as a foundation to imagine more inclusive, knowledge-driven and financially diverse futures for these mixed WHSs.

4.5 Comparative governance and resilience dynamics across Maloti-Drakensberg Park and Ngorongoro Conservation Area

The comparative analysis of the resilience and governance capacities across the Maloti-Drakensberg Park and NCA shows both convergences and divergences shaped by contextual factors and institutional arrangements. There is evidence of operational resilience demonstrated in both sites, which is grounded in the prioritisation of ecological and cultural conservation activities as well as the integration of tourism strategies to attract both domestic and international markets. The use of digital technologies in both sites was also noted in this regard. It was observed that the effectiveness, and challenges faced, of both sites efforts in managing their respective sites is determined by governance structures. In the case of Maloti-Drakensberg, the participants highlighted that there is a significant institutional fragmentation with overlapping mandates between the cultural and the ecological heritage agencies. Such a dilemma was noted to be one of the key hindrances for successful coordination and proper management of the park. As a result, at Maloti-Drakensberg, one of the major challenges faced is slow decision-making due to conflicts of interest between and divided authority between the cultural and ecological stakeholders. Conversely, Ngorongoro showed a stronger governance compared to Maloti-Drakensberg. Despite the existence of structural constraints, there is a stronger integration of cultural heritage and community development at Ngorongoro, resulting in more unified activities that assist in addressing various challenges faced by surrounding communities.

The results show that there is a significant disparity regarding stakeholder dynamics on the two sites. In Ngorongoro, there is a strong social dynamic where communities are incorporated within resilience strategies, public campaigns that put into consideration cultural beliefs and promotes a symbiotic relationship between the park management and the locals. At Maloti-Drakensberg, such an approach is less emphasised, in which limited inclusion mechanisms and inadequate governance limit the participatory initiatives. In addition, both sites showed a lack of innovation capacity. Besides this, management in Ngorongoro showed more agility in leveraging digital platforms while in Maloti-Drakensberg there exist technical and resource constraints challenges. Overall, while both sites showed that there is a shared commitment to promoting essential conservation functions and evolving tourism models, Ngorongoro emphasises robust governance and community engagement which helps contribute to a more resilient, adaptive and socially integrated resilience model. In contrast, Maloti-Drakensberg's resilience is hindered by governance fragmentation and institutional silos. This underscores the need for more cohesive structures that are inclusive of all stakeholders affected, including the communities to augment long-term recovery and sustainability. These distinctions illuminate how contextual governance frameworks and stakeholder relations critically shape the capacity of heritage sites to absorb shocks and reorient toward resilient futures. While this study is grounded in primary empirical data, it is worth noting that several findings align with UNESCO reporting and guidance. For instance, SoC reports for both Maloti-Drakensberg Park and NCA highlight challenges related to governance fragmentation, reliance on tourism revenue, and the importance of community engagement, issues that this research data

corroborate. Additionally, UNESCO's COVID-19 guidance emphasised adaptive, low-impact tourism strategies and the need for stakeholder-inclusive recovery planning, echoing the measures and innovations described by site-level informants in this study.

5. Discussion

The findings of this study provide compelling evidence that mixed WHS in Africa, specifically the Maloti-Drakensberg Park and the NCA, have exhibited both adaptive potential and enduring structural fragilities in the face of COVID-19. As some resilience and innovation were evident, recovery trajectories were uneven, and the complexity of mixed WHS governance remains a significant constraint. The emphasis on maintaining core conservation activities, public health measures and community outreach highlights a form of operational resilience that aligns with [Folke *et al.*'s \(2010\)](#) adaptive capacity framework. Prioritisation of essential services, even amid revenue collapse, demonstrates that resilience is not merely about bouncing back but rather reorganising in ways that preserve core heritage values. This mirrors observations by [Seekamp and Jo \(2020\)](#), who argue for heritage systems that can transform rather than merely absorb shocks. The strong emphasis on science-based approaches, including vaccination and digital technology adoption, highlights the need for integrated knowledge systems in heritage governance. Some of the participants advocated for deeper public understanding of evidence-based practices, and this has also been mentioned by [Roigé *et al.* \(2021\)](#), calling for public health to be recognised as a dimension of cultural resilience. Cultural resistance to vaccination, particularly in Ngorongoro, illustrates how deeply embedded belief systems can constrain adaptive governance, a challenge rarely addressed in mainstream resilience frameworks.

The shift toward digital engagement and domestic market reorientation reflects a growing global trend toward low-impact, localised heritage tourism ([Alvarez-Sousa and Paniza Prados, 2020](#); [Mensah, 2023](#)). Virtual tourism, revised trail systems and new recreational offerings demonstrate how crises can act as a catalyst for rethinking tourism models. Previous studies have also mentioned on transformative resilience, where systems do not simply adapt but evolve into more sustainable configurations ([Seekamp and Jo, 2020](#)). These innovations were often reactive rather than strategic, and their success depended on managerial initiative and external partnerships. In some cases, digital strategies were driven by private actors or nongovernmental organisation collaborators rather than site authorities themselves, revealing an ongoing capability gap within public heritage sites. The ability to build back better thus appears contingent on pre-existing institutional and technological capacity, a concern mentioned by [Hoveka *et al.*'s \(2020\)](#) assessment of protected area innovation in southern Africa.

Despite isolated innovations, the data highlight persistent challenges that undermine systemic resilience. One of these challenges is governance fragmentation particularly between conservation and cultural authorities. Participants highlighted limited synergy, weak inter-agency collaboration and mismatched mandates, issues that echo long-standing critiques of WHS governance in transboundary and mixed-designation contexts ([Mugobi and Mlozi, 2021](#)).

The economic fragility of mixed WHS, exacerbated by dependence on international tourism, reinforces arguments that WHS governance needs to diversify revenue streams and strengthen local economic linkages ([Mensah, 2023](#)). Initiatives such as real estate ventures and ecosystem service payments point to emerging models but still remain promising and unevenly adopted. The findings from this study support the view that resilience at mixed WHS is constrained not only by external shocks but by internal system rigidity, inflexible funding models, siloed bureaucracies and inconsistent community engagement. Such limitations risk entrenching a form of path dependency, where sites revert to pre-crisis practices rather than transforming governance models for long-term sustainability.

The fourth theme of opportunity and future direction suggests a desire among site-level actors to move toward more inclusive, science-informed and collaborative governance frameworks. Based on the comparative analysis of the two sites, the study highlights implications that reflect their unique challenges and opportunities within their respective governance and resilience contexts. In the case of Maloti-Drakensberg Park, the fragmented governance structures require a need to enhance institutional coordination and cohesive mandates across ecological and cultural conservation agencies. This would assist in improving decision-making and enable more comprehensive crisis response. In addition, it would be beneficial for the park to intensify community engagement and capacity building to foster a broader stakeholder involvement, which is currently omitted. Further, the park can benefit from investing on technical innovation and training within public institutions. This would assist in reducing the high dependence levels on the private operators and improve the park's adaptive management strategies. Regarding Ngorongoro, there is need for continued efforts to create a balance between cultural sensitivity issues with scientific guidance to further strengthen public trust. It will also be beneficial to expand digital innovations beyond private operators as well as enhance resource allocation. This will help in enhancing resilience and recovery outcomes. One main challenge of Ngorongoro is the overreliance on tourism as a key revenue generator at the park. Therefore, diversifying revenue streams would be significant in addressing this challenge and support sustainable governance of this park.

The findings of this study underscore the significant need to refine the resilience frameworks on mixed WHS, particularly in a developing context. It was observed that while the existing frameworks, more especially those that emphasise continuity of main functions, absorptive capacity and adaptability, remain relevant, tailored content-specific frameworks that address complex WHS are needed. Key problems were identified in this study – (1) governance fragmentation, as seen in the Maloti-Drakensberg case, and (2) innovation asymmetries, as seen in both sites. These problems are attributed to both operational constraints and structural dimensions, which contribute to the presumed linearity of both sites' resilience. This study therefore exposes the limitations of traditional resilience models when applied to complex settings such as mixed WHS in developing contexts. These models tend to overlook the siloed institutions, misaligned mandates and complex cultural-political dynamics that shape crisis response, particularly within mixed WHS governance systems. In addition, while most modern frameworks advocate for technological adaptation as part of their resilience strategies, this study finds that in developing contexts, there is a significant uneven innovation capacity. This challenge is attributed to the disparities in access to digital, organisational mandates as well as the local-private sector dynamics.

As a result, this study advocates for heritage-specific resilience frameworks that center the interactions between cultural and ecological agencies, as well as community inclusion in tourism planning and conservation strategies. For example, in Ngorongoro, cultural beliefs were observed to influence public health interests. This suggests that resilience cannot be fully understood in purely technical terms; incorporating social legitimacy and local epistemologies may offer more sustainable outcomes. This study, therefore, supports the adoption of relational and systematic resilience models, in which recovery is not only seen as returning to the norm, but reimagining the interplay of heritage governance, community engagement and adaptive strategizing. Overall, situating resilience within broader socio-political dynamics, this study offers insights into more context-specific evolution of resilience frameworks and heritage settings across developing regions.

Calls for knowledge-sharing platforms, early education and inter-site training reflect a belief that resilience must be built not just at the site level, but across institutional and epistemic networks. This is similar to what was mentioned by [Thakadu et al. \(2023\)](#) on transboundary WHS collaboration and supports emerging thinking in heritage policy that emphasises adaptive co-management, particularly in contexts of high ecological and cultural complexity. The desire to embed mixed WHS learning in schools and increase youth engagement offers a powerful strategy for long-term cultural sustainability, aligning with the

UN's Education for Sustainable Development goals. As this study showcased substantial resilience potential, it also cautions against assuming that innovation alone can overcome entrenched barriers. When it comes to mixed WHS in the Global South, transformative resilience must be grounded in structural reform, capacity investment, and equitable governance.

Overall, to improve the applied value of the findings, this study provides several implications on policy and practical interventions tailored to the complexities of mixed WHS in developing contexts. A key recommendation is to promote revenue diversification at both sites, though this need is particularly urgent in Ngorongoro, where the study identified a heavy reliance on tourism as the primary, and often sole, source of revenue. This can be achieved through the promotion of cohesive management that enables partnerships amongst NGOs, local enterprises, private sectors and community-based tourism operators. This effort needs to be supported by enabling national policies. Regarding the policy level, it would be beneficial to promote institutional integration on both sites, where cultural and natural mandates can be facilitated through the formation of inter-agency task forces that can work on joint management frameworks. Such a force should outline clear goals and terms of reference as well as shared performance indicators. Allowing for this initiative would formalise collaboration, reduce conflicts of interest and most importantly, enhance crisis response. The two sites may also benefit from promoting capacity-building initiatives. These should include targeted training of the sites' staff, regional knowledge workshops and secondments between agencies. Such initiatives would be beneficial in further operationalizing resilience thinking. It is important to note that embedding these implications within broader national heritage policies and strategies would help in the implementation of sustainable practices that are aligned with global heritage governance standards. Ultimately, this study contributes to a more grounded and context-specific understanding of resilience, offering practical insights for reimagining heritage governance in complex and developing regions.

6. Conclusion

This study examined the resilience, recovery strategies, and ongoing challenges facing two African mixed WHS, the Maloti-Drakensberg Park and the NCA, in the wake of the COVID-19 pandemic. Drawing on the perspectives of twelve key informants in management, planning, conservation and community engagement, the research explored how these sites navigated an unprecedented global crisis and what their experiences reveal about the broader governance of mixed WHS. The findings revealed that as both sites exhibited notable degrees of operational resilience, including the continuation of conservation activities and adherence to health guidelines, their recovery trajectories were shaped by significant constraints. Digital innovation and domestic tourism played a critical role in reactivating visitor engagement, but these responses were often fragmented and dependent on external support. Institutional challenges, including governance fragmentation, limited capacity and over-reliance on tourism revenue, persisted as core barriers to transformative change. The study also reveals a strong desire among heritage managers and site actors for a more integrated, inclusive and future-oriented governance model. Calls for cross-site knowledge exchange, community education, alternative financing and stronger science-policy linkages suggest a readiness to reimagine heritage management beyond reactive crisis response. In terms of scholarly contribution, this paper extends the literature on heritage resilience through providing rare qualitative insights from two under-researched mixed WHS in sub-Saharan Africa. The study highlights the value of practitioner perspectives in evaluating post-crisis adaptation and the limitations of one-size-fits-all resilience frameworks in contexts marked by ecological and cultural interdependence.

Based on the findings, the study recommends a multifaceted approach to strengthening the resilience of mixed WHS. First, institutional integration should be prioritised, with heritage agencies fostering stronger coordination between cultural and natural authorities to enhance

policy coherence and response efficiency, particularly at sites with dual mandates. Equally important is investment in digital infrastructure and staff training to support the development and maintenance of virtual tourism platforms, which are vital for long-term visibility and adaptive capacity. WHS education should be embedded within school curricula and mechanisms for inclusive, community-based decision-making should be expanded in order to build local stewardship. Financial sustainability also requires attention, heritage sites should diversify revenue streams beyond traditional tourism by exploring models such as real estate partnerships, payments for ecosystem services, and philanthropic contributions. Finally, resilience must be embedded in national and regional heritage policy frameworks through adaptive governance structures capable of responding to evolving socio-ecological dynamics.

This study is not without limitations. Its qualitative design and focus on two case sites constrain the generalisability of findings. However, these cases of Ngorongoro and Maloti-Drakensburg offer an important starting point for theorising resilience within mixed WHS in the Global South. Future comparative research, including a wider range of mixed WHS across different national and cultural contexts, could refine the typologies of resilience and governance proposed in this study. Future research should extend comparative analysis to additional WHS types and regions, and longitudinal studies could evaluate whether the innovations documented here are sustained as global tourism patterns shift.

References

- Abouei, R. and Tavasoli, M. (2024), "The dilemma of urban heritage conservation in post-conflict Bamiyan: a critical analysis of causes, failures, consequences and prospects", *The Historic Environment: Policy and Practice*, Vol. 15 No. 4, pp. 1-23, doi: [10.1080/17567505.2024.2438406](https://doi.org/10.1080/17567505.2024.2438406).
- Alvarez-Sousa, A. and Paniza Prados, J.L. (2020), "Visitor management in world heritage destinations before and after COVID-19, Angkor", *Sustainability*, Vol. 12 No. 23, p. 9929, doi: [10.3390/su12239929](https://doi.org/10.3390/su12239929).
- Azzaz, A.M. and Elshaer, I.A. (2024), "Heritage tourism resilience and sustainable performance post COVID-19: evidence from hotels sector", *Heritage*, Vol. 7 No. 3, pp. 1162-1173, doi: [10.3390/heritage7030055](https://doi.org/10.3390/heritage7030055).
- Borseková, K. and Vitálišová, K. (2024), "Participatory models and approaches in sustainable cultural tourism", in *Innovative Cultural Tourism in European Peripheries*, Routledge, pp. 92-113.
- Botha, N., Job, H. and Kimario, F. (2021), "Potential and challenges of the Serengeti-Ngorongoro Biosphere Reserve, Tanzania", *Journal on Protected Mountain Areas Research and Management*, Vol. 13, pp. 27-37, doi: [10.1553/eco.mont-13-sis27](https://doi.org/10.1553/eco.mont-13-sis27).
- Chatanga, P., Kotze, D.C., Janks, M. and Sieben, E.J.J. (2019), "Classification, description and environmental factors of montane wetland vegetation of the Maloti-Drakensberg region and the surrounding areas", *South African Journal of Botany*, Vol. 125, pp. 221-233, doi: [10.1016/j.sajb.2019.04.028](https://doi.org/10.1016/j.sajb.2019.04.028).
- Daniel, C.M. (2023), "Legal challenges of multiple land use in Tanzania: a case study of the Ngorongoro Conservation Area", Doctoral dissertation, The Open University of Tanzania.
- Dey, A. and Pasupuleti, R.S. (2025), "Relevance of buffer zones in protecting world heritage sites (WHS) in urban contexts: case of Indian WHS", *Journal of Cultural Heritage Management and Sustainable Development*. doi: [10.1108/JCHMSD-06-2023-0089](https://doi.org/10.1108/JCHMSD-06-2023-0089).
- Duval, M. (2022), "To what degree does a UNESCO world heritage site listing improve the conservation of heritage sites? Insights from the case of the Maloti-Drakensberg world heritage site (South Africa-Lesotho)", *International Journal of Heritage Studies*, Vol. 28 No. 3, pp. 376-399, doi: [10.1080/13527258.2021.2009540](https://doi.org/10.1080/13527258.2021.2009540).
- Falk, M.T. and Hagsten, E. (2023), "Threat perception and adaptive capacity of natural world heritage site management", *Environmental Management*, Vol. 71 No. 2, pp. 285-303, doi: [10.1007/s00267-022-01780-y](https://doi.org/10.1007/s00267-022-01780-y).

- Folke, C., Carpenter, S.R., Walker, B., Scheffer, M., Chapin, T. and Rockström, J. (2010), "Resilience thinking: integrating resilience, adaptability and transformability", *Ecology and Society*, Vol. 15 No. 4, pp. 20-29, doi: [10.5751/es-03610-150420](https://doi.org/10.5751/es-03610-150420).
- Gorenflo, L.J. and Romaine, S. (2021), "Linguistic diversity and conservation opportunities at UNESCO world heritage sites in Africa", *Conservation Biology*, Vol. 35 No. 5, pp. 1426-1436, doi: [10.1111/cobi.13693](https://doi.org/10.1111/cobi.13693).
- Hoveka, L.N., Van Der Bank, M. and Davies, T.J. (2020), "Evaluating the performance of a protected area network in South Africa and its implications for megadiverse countries", *Biological Conservation*, Vol. 248, 108577, doi: [10.1016/j.biocon.2020.108577](https://doi.org/10.1016/j.biocon.2020.108577).
- Hosseini, K., Stefaniec, A. and Hosseini, S.P. (2021), "World heritage sites in developing countries: assessing impacts and handling complexities toward sustainable tourism", *Journal of Destination Marketing and Management*, Vol. 20, 100616, doi: [10.1016/j.jdmm.2021.100616](https://doi.org/10.1016/j.jdmm.2021.100616).
- Huynh, D.V., Duong, L.H., Nguyen, N.T. and Truong, T.T.K. (2022), "Tourism vulnerability amid the pandemic crisis: impacts and implications for rebuilding resilience of a local tourism system in Vietnam", *Social Sciences*, Vol. 11 No. 10, p. 441, doi: [10.3390/socsci11100441](https://doi.org/10.3390/socsci11100441).
- Kivuyo, S.L. (2021), "Effectiveness of multiple land use concept in conservation of protected area: a case study of the Ngorongoro Conservation Area", Doctoral dissertation, The Open University of Tanzania.
- Kuliš, Z. (2024), "Cultural tourism as the road to economic resilience: a spatial-econometric analysis of South-European regions", Doctoral dissertation, University of Split. Faculty of economics Split.
- Liburd, J.J. and Becken, S. (2020), "Values in nature conservation, tourism and UNESCO world heritage site stewardship", in *Protected Areas, Sustainable Tourism and Neo-Liberal Governance Policies*, Routledge, pp. 23-39.
- Liu, Y., Wang, Y., Dupre, K. and McIlwaine, C. (2022), "The impacts of world cultural heritage site designation and heritage tourism on community livelihoods: a Chinese case study", *Tourism Management Perspectives*, Vol. 43, 100994, doi: [10.1016/j.tmp.2022.100994](https://doi.org/10.1016/j.tmp.2022.100994).
- Mbuthia, S., Kieti, D. and Ipara, H. (2024), "Contribution of tourism to cultural heritage resilience: an analysis of old towns of Kenya's coast", *Journal of Hospitality and Tourism Management*, Vol. 7 No. 2, pp. 95-118.
- Mengwai, R.N. (2021), "World heritage and transfrontier conservation areas: tourism development and community participation in South Africa", Master's thesis, University of Pretoria.
- Mensah, J. (2023), "UNESCO world heritage sites and sustainable local community development", *Journal of Community Archaeology and Heritage*, Vol. 10 No. 2, pp. 128-143, doi: [10.1080/20518196.2023.2179765](https://doi.org/10.1080/20518196.2023.2179765).
- Morrison, T.H., Adger, W.N., Brown, K., Hettiarachchi, M., Huchery, C., Lemos, M.C. and Hughes, T.P. (2020), "Political dynamics and governance of world heritage ecosystems", *Nature Sustainability*, Vol. 3 No. 11, pp. 947-955, doi: [10.1038/s41893-020-0568-8](https://doi.org/10.1038/s41893-020-0568-8).
- Mugobi, T. and Mlozi, S. (2021), "The impact of external factors on ICT usage practices at UNESCO world heritage sites", *Journal of Tourism, Heritage and Services Marketing*, Vol. 7 No. 1, pp. 3-12.
- Muresherwa, G., Makuzva, W. and Dube, C.N. (2024), "Sustainable tourism practices in the post-COVID era: lessons from Southern Africa", *International Conference on Tourism Research* (pp. 255-262). *Academic Conferences International Limited. Proceedings of the 7th International Conference on Tourism Research*, 18-19 March 2024, Cape Peninsula University of Technology, South Africa.
- Nag, A. and Mishra, S. (2024), "Sustainable competitive advantage in heritage tourism: leveraging cultural legacy in a data-driven world", in *Review of Technologies and Disruptive Business Strategies*, Emerald Publishing, Leeds, Vol. 3, pp. 137-162, doi: [10.1108/s2754-586520240000003008](https://doi.org/10.1108/s2754-586520240000003008).
- Newisar, M.A. (2023), *Tensions Between Local Development, National and International Conservation Policies: The Case of World Heritage Status in Liverpool*, The University of Manchester.

- Pennington-Gray, L. and Basurto, E. (2023), "The role of crisis management in managing cultural heritage tourism in a covid era", in *Heritage and Cultural Heritage Tourism: International Perspectives*, Springer International Publishing, Cham, pp. 61-72.
- Roigé, X., Arrieta-Urtizberea, I. and Seguí, J. (2021), "The sustainability of intangible heritage in the COVID-19 era—resilience, reinvention, and challenges in Spain", *Sustainability*, Vol. 13 No. 11, p. 5796, doi: [10.3390/su13115796](https://doi.org/10.3390/su13115796).
- Said, C. and Ichumbaki, E.B. (2023), "Ours or yours? Localizing the 'mixed sites' concept for the sustainable preservation of heritage in Africa: the case of Chongoleani Peninsular, Tanzania", *International Journal of Cultural Policy*, Vol. 29 No. 3, pp. 299-313, doi: [10.1080/10286632.2022.2049769](https://doi.org/10.1080/10286632.2022.2049769).
- Seekamp, E. and Jo, E. (2020), "Resilience and transformation of heritage sites to accommodate for loss and learning in a changing climate", *Climatic Change*, Vol. 162 No. 1, pp. 41-55, doi: [10.1007/s10584-020-02812-4](https://doi.org/10.1007/s10584-020-02812-4).
- Spennemann, D.H. (2021), "COVID-19 on the ground: managing the heritage sites of a pandemic", *Heritage*, Vol. 4 No. 3, pp. 2140-2162, doi: [10.3390/heritage4030121](https://doi.org/10.3390/heritage4030121).
- Thakadu, O.T., Hambira, W.L., Masunga, G.S., Ngwenya, B.N., Engleton, A.L., Badimo, D. and Mosie, I. (2023), "Co-management of world heritage sites for community benefit", in *Handbook on Tourism and Conservation*, Edward Elgar Publishing, pp. 300-327.
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (2021a), *World Heritage in the Face of COVID-19*, UNESCO, Paris.
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (2021b), *UNESCO World Heritage Centre- State of Conservation (SoC 2021)*, Maloti-Drakensberg Park, available at: <https://whc.unesco.org/en/soc/4201/?utm> (accessed 23 December 2025).
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (2023), *UNESCO World Heritage Centre- State of Conservation (SoC 2023)*, Maloti-Drakensberg Park, available at: <https://whc.unesco.org/en/soc/4477> (accessed 23 December 2025).
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (2025a), *UNESCO World Heritage Centre- State of Conservation (SoC 2025) Ngorongoro Conservation Area*, United Republic of Tanzania, available at: <https://whc.unesco.org/en/soc/4663> (accessed 23 December 2025).
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (2025b), "COVID-19 recovery: working together to restore our shared humanity", available at: <https://www.unesco.org/en/covid-19> (accessed 23 December 2025).
- United Nations World Tourism Organisation (UNWTO) (2021), "World tourism barometer", available at: <https://www.unwto.org/un-tourism-world-tourism-barometer-data> (accessed 27 May 2025).
- Valagussa, A., Frattini, P., Crosta, G.B., Spizzichino, D., Leoni, G. and Margottini, C. (2020), "Hazard ranking of the UNESCO world heritage sites (WHs) in Europe by multicriteria analysis", *Journal of Cultural Heritage Management and Sustainable Development*, Vol. 10 No. 4, pp. 359-374, doi: [10.1108/jchmsd-03-2019-0023](https://doi.org/10.1108/jchmsd-03-2019-0023).
- Vousdoukas, M.I., Clarke, J., Ranasinghe, R., Reimann, L., Khalaf, N., Duong, T.M., Ouweneel, B., Sabour, S., Iles, C.E., Trisos, C.H., Feyen, L., Mentaschi, L. and Simpson, N.P. (2022), "African heritage sites threatened as sea-level rise accelerates", *Nature Climate Change*, Vol. 12 No. 3, pp. 256-262, doi: [10.1038/s41558-022-01280-1](https://doi.org/10.1038/s41558-022-01280-1).
- Zhang, X., Edelenbos, J. and Gianoli, A. (2024), "Urban conservation in multi-level governance: comparing the interaction patterns in conserving different types of cultural heritage in the mainland of China", *Urban Governance*, Vol. 4 No. 1, pp. 25-36, doi: [10.1016/j.ugj.2023.11.001](https://doi.org/10.1016/j.ugj.2023.11.001).

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